

# **Material Testing in Support of the ISS Electrochemical Disinfection Feasibility Study**

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The International Space Station (ISS) Program recognizes the risk of microbial contamination in their potable and non-potable water sources. The end of the Space Shuttle Program has limited the ability to send up shock-kits of biocides in the event of an outbreak. Currently, the United States Orbital Segment (USOS) water system relies primarily on iodine to mitigate contamination concerns, which has been successful in remediating the small cases of contamination documented. However, a secondary method of disinfection is a necessary investment for future space flight. Over the past year, the National Aeronautics and Space Administration (NASA) Johnson Space Center (JSC) has investigated the development of electrochemically generated systems for use on the ISS, which include: hydrogen peroxide, ozone, hypochlorite and peracetic acid. In order to use these biocides on deployed water systems, an understanding of the effect these biocides have on current ISS materials is necessary prior to proceeding forward with possible on-orbit applications. The following paper will discuss the material testing that was conducted to assess the effects of the biocides on current ISS materials.